STATE OF MISSOURI

Bob Holden Governor Stephen M Mahfood Director

DEPARTMENT OF NATURAL RESOURCES

www dnr state mo us

A717
Site Herculaneum Lead
ID # MOD006266373
Break 2.0
Other. 12-16-02
CERT

RECEIVED
DEC 24 2002
SUPERFUND DIVISION

December 16, 2002

Mr Bruce Morrison
U S Environmental Protection Agency
901 N 5th Street
Kansas City, Kansas 66101

Dear Mr Morrison

I have reviewed The Doe Run Company's Ecological Risk Assessment Plan (ERAP) and am providing comments below In general, the main concerns with the ERAP, similar to the other supporting documents for facility investigations (Sampling and Analysis Plan, Quality Assurance Project Plan), are those of scope The ERAP focuses very narrowly on aquatic impacts from the slag pile This falls short of the scope outlined in the Administrative Order on Consent (AOC) on several counts

The following are the department's specific comments on the subject document

1 Page 1-1, Section 1 0, the ERAP should focus on all sources of hazardous substance releases that contribute to ecological risk The AOC does not specify the slag pile as the only source to be evaluated within the Ecological Risk Assessment Other sources of hazardous substances that contribute to ecological risk include runoff from haul roads and soil contaminated by air-borne lead deposition

2 Page 2-1 and 2-2, Section 2 1 1, sample locations that have been brought into question in the text should be identified specifically where possible through discussion of agency personnel that have knowledge of these locations The sample locations that have not been precisely located should not be dropped from the analyses unless the agencies agree in advance

3 Page 2-3, Table 1, an estimate of metal mobility from the slag is presented in this table that shows relatively low mobility However, there is other data from the site, including storm water runoff from city streets and the slag pile and groundwater data from the slag pile that indicates higher mobility of heavy metals The data in the table appears to be selectively presented to present a biased picture of site conditions

4 Page 2-5, section 2 3 2, there is a propensity to eliminate data that Doe Run finds suspect for various reasons Every effort should be made to resolve the problems with this historic data before it is eliminated Again, the agencies need to agree that the data is not valid before it is eliminated

5 Page 2 5, section 2 4, 400 acres is not a broad enough area to assess the ecological impacts from the site Again, the scope of the ERA should be to investigate the slag storage area as well as environmental impacts to terrestrial ecosystems and the Mississippi River from air deposition of metals or releases from other areas of the facility (especially the former slag storage area) Data collected by the U S Fish and Wildlife Service indicate significant metal concentrations in the Mississippi River below Herculaneum Stormwater runoff associated

with hauling routes and other contaminated areas in Herculaneum should be investigated as well Residential soil data indicates a large area has been contaminated by smelter deposition Terrestrial ecosystem impacts from the smelter should also be assessed

6 Page 2-6, section 2 5 2, there is a publication on geochemical background concentration of metals in soil that is specific to Missouri,
Tidball, R R , 1984, Geochemical Survey of Missouri, Geological Survey Professional Paper # 954-H,I This document should be used instead of Shacklette and Boerngen (1984)

7 Page 2-6, section 2 5 5, EPA has rejected the Missouri Water Quality Standards for the Protection of Aquatic Life for heavy metals The Missouri standards are in the process of being revised Federal standards should be used as the Applicable or Relevant and Appropriate Requirement due to the higher-degree-of-protectiveness

8 Page 2-7, section 2 5 6, it would be helpful if both the geometric and arithmetic mean are presented for all data sets as a comparison

9 Page 2-8, section 2 6 2 3, soil chemistry analyses should also include total phosphorous, carbonate, and organic matter content These parameters, along with pH and total concentration of specific metals, are the most useful measurements for assessing the mobility and bioavailability of Pb, Cd and Zn

10 Figure 3, the figure should include smelter emissions, and Herculaneum street runoff as additional primary sources Arrows should also be drawn from air to soil and surface water

11 Page 3-3, section 3 1 1, the scope of the discussion in the text should be expanded to include upland impacts from smelter emissions and runoff from city streets

12 Page 3-3, section 3 1 1, the discussion of site background should also include the Army Corps of Engineers determination that the area around the slag pile is a jurisdictional wetland and the subsequent letter from the department's Land Reclamation Program prohibiting expansion into the surrounding wetland

13 Page 3-5, section 3 1 2, similar to comment #11 above, upland habitat should also be discussed here

14 Page 3-5, section 3 1 3, runoff from city streets should also be assessed as a flow pathway

15 Page 3-10, section 3 2, a paper by McDonald et al (2000, Arch Environ Contam Toxicol ,39, 20-31) should be considered here as an excellent source for toxicological benchmarks for sediments

16 Page 3-16, section 3 9 1, step #3, applying uncertainty factors can be a very subjective exercise This step in the process should be done with *a priori* agency agreement and participation

17 Page 3-17, section 3 9 2, again the uncertainty analysis should be done with full participation of the agencies

18 Figure 10 and Figure 11, our comments made throughout the text of the ERAP should be reflected in these figures Transects radiating out from the slag pile need to extend to the point that the extent of contamination from the slag pile is characterized Transects should also be established in upland areas to assess impacts from the smelter fallout These upland samples will provide useful information related to "background" contamination not associated with the slag pile Upland samples should be collected in undeveloped areas south, southwest, and north of the facility

19 Figure 10, point bars may not be the best location to characterize metal concentrations Metals tend to be concentrated in the fine particle size fraction Finer sediments will be located in backwater pools, not point bars These areas should be sampled as well Additional sample locations are needed to assess impacts from runoff from city streets contaminated by truck traffic The upgradient location is likely to be contaminated from stormwater discharges from the City of Herculaneum into Joachim Creek A better background sample location would be up close to the I-55 bridge Changes in this figure include transects that delimit extent of contamination, sample locations that characterize stormwater inputs from the City of Herculaneum, sample locations further downstream on the Mississippi River near where previous sampling by U S Fish and Wildlife Service documented elevated metals, and macrobenthic, soil invertebrate, and plant tissue sampling locations

I can be reached at (573) 751-3356, if you have any questions concerning this matter

Sincerely,

David E Mosby, RG
Chief, Project Management Unit

DEM ta

c Mr Jim Lanzafame, The Doe Run Company
Mr Tony Petruska, EPA
Mr Kevin Mohammadi, DNR-WPCP